

**Snowmobiling in Montana:
A 1998 Update**

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By
James T. Sylvester
Bureau of Business and Economic Research

Introduction

Our most recent research suggests that about 12 percent of the state's households include snowmobile recreationists. Nearly always, the whole family participates. With an average household size of about 2.5, perhaps as many as 95,000 Montanans participate in the sport each winter.

Virtually all winter visitors to Yellowstone, for instance, use snowmobiles. This is true in part because the Park's internal roads are otherwise impassable to vehicles in winter. Perhaps more important, Yellowstone and environs have been successfully promoted as a world-class snowmobiling destination.

Our estimates suggest that non-resident snowmobilers spend about \$200 per activity day, including food, lodging, and often, snowmobile rental costs. On average, residents spend much less per activity day than non-residents; most of their out-of-pocket costs are for gasoline. We estimate that resident and non-resident snowmobilers buy about 4 million gallons of gasoline per season. With a base tax of \$.27 per gallon, we estimate that snowmobilers in Montana generate over \$1 million in revenue for the state highway trust fund.

In short, snowmobiling is a popular, revenue-generating winter recreation for Montana. It's popular with a solid share of households in the state, and increasingly popular with non-resident tourists.

Methodology

This project was sponsored by the Montana Fish, Wildlife, and Parks Department and the Montana Snowmobile Association. Bureau staff conducted the research, using a three-pronged approach, described below.

1. Several questions regarding snowmobile ownership and use were appended to the Bureau's ongoing Montana Poll. These questions were asked of a random sample of households in December 1997, and March 1998, and June 1998. The results, averaged over the three polls, provide an overall estimate of snowmobile numbers in Montana, and of the proportion of Montana households participating in the sport.
2. From its records, the Montana Department of Justice generated a random sample of 2,000 registered snowmobile owners in the state in April 1998. The BBER contacted 426 households with registered snowmobiles by telephone. 409 households completed a Computer Assisted Telephone Interview for a response rate of 96 percent. Although these characteristics may not be representative of all resident snowmobilers, they do reflect a solid sample of those who register.
3. Information on non-resident snowmobilers was gathered in another way. Between December 1997 and March 1998, the University of Montana Institute for Travel and Recreation Research (ITTR) intercepted non-resident visitors to Montana. These visitors were asked to maintain a diary of their expenditures while in Montana. Those who snowmobiled were contacted by telephone regarding snowmobile specific expenditures. Only one person contacted refused to cooperate.

Assumptions

We used several basic assumptions to derive statewide impacts from our survey of Montana snowmobile activity. The following assumptions were applied to data from both resident and non-resident snowmobilers.

* Based on information from AAA Montana, we assumed an average gasoline price of \$1.26 during the winter of 1997-98. Prices were much higher in West Yellowstone.

*Fuel usage depends on size and age of machines as well as terrain and snow conditions; based on information from active snowmobilers, we assumed an **average fuel consumption of 8.63 miles per gallon of gas.**

* According to officials at Yellowstone National Park, about 55,000 visitors entered the Park from West Yellowstone between December, 1997 and March, 1998.

Other assumptions pertained to data analysis of impacts generated by **resident** snowmobilers only. Resident-only assumptions include:

* According to a July 1, 1996 estimate by the U.S. Bureau of the Census, Montana has a total of 341,000 households with an average size of 2.5 persons each.

* **About 10 percent of respondent households in recent Montana Polls said they owned one or more snowmobiles.** The margin of error for this figure is plus or minus 5 percent.

* Again according to recent Montana Polls, **snowmobiling households in Montana owned an average of 1.7 snowmobiles.**

* During the 1997-98 season, slightly more Montana households participated in snowmobiling (12 percent) than owned snowmobiles (10 percent) -- based on Montana Poll data.

* Based on interviews with Montana snowmobilers, residents travel about 50 miles per activity day on their snowmobiles, and spend about \$10 for snowmobile fuel.

Several important assumptions were made about **nonresident** patterns of snowmobile use and activity. All the following were derived from interviews completed by nonresident snowmobilers in Montana.

* Nonresident snowmobilers in Montana travel about 76 miles per activity day -- more miles than residents because non-residents tend to come for one purpose and want their moneys worth.

* Although they travel more miles, nonresidents spend about the same per day on fuel (about \$10 on average) because gasoline costs are often covered by outfitters as part of snowmobile rental.

* Nonresidents spend about 4 days per snowmobile vacation.

Snowmobile Numbers

One aspect of this study was to estimate the total number of snowmobiles in Montana. This is somewhat problematic because anecdotal evidence from both within the state and from trail administrators in other states suggests that many snowmobiles in private hands are never registered. By utilizing Montana Poll responses on snowmobile usage we have arrived at an estimate of about 58,000 snowmobiles in Montana (Table 1). This number generally agrees with the records of the Title & Registration Bureau; they have over 70,000 snowmobiles on record.

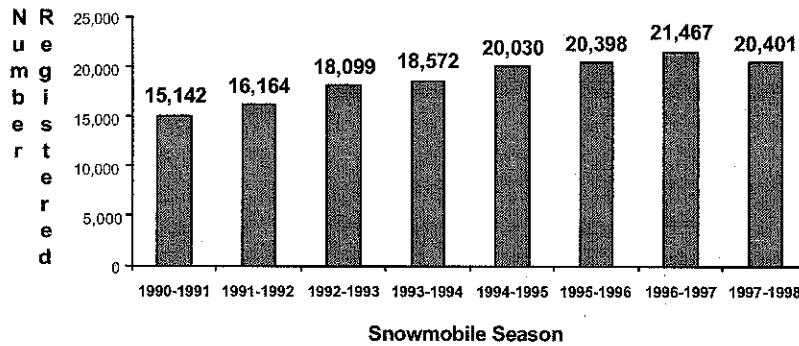
Figure 1 shows the number of snowmobiles registered with the Montana Department of Justice, Title and Registration Bureau since 1990. **Our estimate suggests, about 65 percent of Montana snowmobiles are not registered.** Many of these may not be actively used, used only on private lands where registration is not required, or simply not in compliance with state registration requirements.

Table 1: Number of snowmobiles in Montana

Number of households		341,000
Proportion of households with snowmobiles	<i>times</i>	10%
Number of snowmobiles per household	<i>times</i>	1.7
Number of snowmobiles	<i>equals</i>	58,000

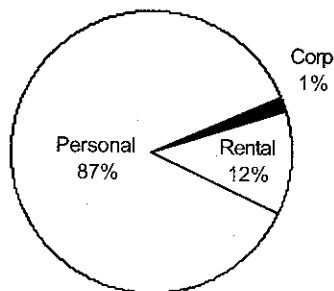
Sources: Bureau of Business and Economic Research, The University of Montana , Montana Poll; and, U.S. Department of Commerce, Bureau of the Census.

Figure 1: Number of Registered Snowmobiles, Montana, 1990-1998



The BBER obtained a sample of 2,000 registered snowmobile owners from the Montana Department of Justice, Title and Registration Bureau. This list was used to derive the portion of snowmobiles used by business or as rental machines. Figure 2 shows the distribution by type of ownership. About 87 percent of registered snowmobiles are registered to private individuals. Another 12 percent are owned for rental or demonstration purposes. Nearly three-quarters of the rental machines are located in West Yellowstone. Just over 1 percent of registered snowmobiles are owned by corporate or government entities.

Figure 2: Ownership of registered snowmobiles



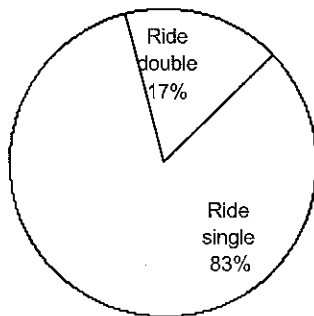
Rider Patterns

In order to estimate total ridership, we asked:

“Does each trip member ride their own machine?”

The results showed snowmobile riding patterns that aren't too dissimilar from car commuter patterns. That is, most people ride single. Where resident snowmobilers double up, the primary reason was the second rider's youth.

Figure 3: Non-resident and Resident Riding Patterns



Activity Days

One measure of the sport's popularity and potential impact is the number of "activity days," a figure roughly defined by the estimated number of snowmobilers and their average number of outings per season. Keep in mind that snowmobiling is a dispersed outdoor activity, so precise counts are virtually impossible. However, we have derived an estimate.

Montana Poll data suggested that between 9 percent and 14 percent of state residents snowmobiled during the 1997-98 season. The average household size of those completing our interview was 2.2 persons who snowmobiled, and the median number of outing days per season was 15.

A conservative estimate of 10 percent resident participation and 2.2 household members who snowmobile suggests a total of about **1.1 million activity days per season for Montana snowmobile enthusiasts. (Howard—I took this amount times \$32/day to derive \$35 million)**

Nonresident snowmobilers flock to West Yellowstone, an area with world class facilities and packaged tours. Our sample and results from previous studies suggest that over three-quarters of nonresidents snowmobiling in Montana spent time in or near West Yellowstone (Figure 3). **About 56,000 visitors entered through the West Gate in during the winter of 1996-97, and 55,000 during 1997-98 (November through March) -- a poor season overall for snow.**

On average, only about 2 percent of resident snowmobiling took place in Yellowstone Park, while survey data tell us that about 25 percent of all nonresident snowmobile activity took place in the park. Using these proportions, we arrive at a total of 222,000 activity days for nonresident snowmobilers in Montana during the 1997-98 season.

Other nonresident snowmobiling occurs in the Big Hole Valley where nearby Idaho residents cross over; in and around Lookout Pass where Idaho and Washington residents make day-trips; and in northwestern Montana where Marias Pass and Eureka draw some limited Canadian visitation. Smaller numbers of nonresident snowmobilers also visit Cooke City, Lincoln, and Seeley Lake. Nonresident visits to border areas outside West Yellowstone are shorter, on average two days.

Thus, combined resident and nonresident snowmobile activity days amounted to 1.33 million during Montana's 1997-98 winter season. By comparison, downhill ski areas counted only about 1 million activity days total for residents and nonresidents alike, for the 1997-98 season.

Expenditures

We estimated snowmobile-related spending for both residents and nonresidents in our survey of the 1997-98 season. However, our major interest here is nonresident expenditures because they are part of Montana's important nonresident tourism industry. Like other "basic" industries, tourism brings new dollars into the state economy.

Our estimates for total activity days provided the basis for estimating expenditures per day. We used spending per day, rather than per outing, because outings generally take only one day (for residents), or occupy several days (for nonresidents using package deals). We also calculated gasoline usage estimates on a per day basis, even though for nonresidents gasoline may be part of a package price.

Table 2 shows that total mean expenditures for nonresidents were almost \$200 per activity day. Table 3 breaks down total nonresident expenditures for each category, using the total activity day numbers described earlier.

Note that nonresident snowmobilers spent over **\$44 million dollars in Montana during the 1997-98 season** for daily personal expenses. Almost \$16 million of this went for lodging, and another \$11 million was spent in Montana restaurants and bars.

On the other hand, residents typically don't incur lodging costs and spend less on eating and drinking, and other expenses. A majority of residents don't make expenditures in several of the spending categories. As table 2 shows, **residents median expenditures were about \$32 per day some** 16 percent of the comparable figure for nonresidents.

Table 2: Expenditures per person per day

	<u>Median</u>		<u>Median</u>
Gas for snowmobiles	10.00	10.15	10.00
Gas for transportation	11.11	10.55	10.00
Lodging	41.67	8.55	0.00
Eating & drinking	33.33	10.87	7.50
Grocery and convenience stores	5.56	5.63	4.25
Entertainment and recreation places	4.00	1.06	0.00
Snowmobile dealers	3.70	6.13	0.00
Other retail	7.14	1.46	0.00
Other expenditures	0.00	0.11	0.00
Total daily expenditures	116.51	54.51	31.75

Table 3: Total nonresident expenditures

Gas for snowmobiles	2,842,851
Gas for transportation	3,206,006
Lodging	15,657,962
Eating & drinking places	10,921,362
Grocery and convenience stores	2,112,087
Entertainment and recreation stores	2,118,771
Other retail	2,698,035
Snowmobile dealers and repairs	4,014,748
 Total nonresident expenditures in Montana	 \$44,131,036

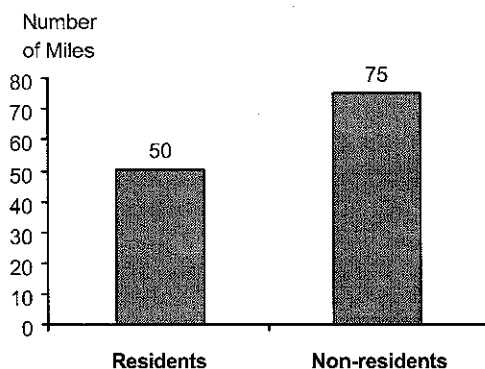
The impact of snowmobile related spending can also be understood in terms of jobs and income. Approximately 25 percent of the nonresident spending becomes direct labor income for Montanans - income earned by people who work in lodging places, eating and drinking establishments, and other businesses that service tourists. The remaining percentage is spent on items that must be imported into Montana for sale such as film, groceries and clothing.

Overall, we estimate that nonresident snowmobilers generate over \$11 million per year in labor income for Montanans -- or about 800 full and part-time jobs.

Gasoline Used by Snowmobiles

Gasoline usage estimates are important because they suggest tax amounts contributed to the state highway trust fund by snowmobilers. Under current legislation a portion of these revenues are returned to snowmobilers through the trail grooming program.

We asked each respondent the average distance traveled on a typical snowmobile outing. Resident snowmobilers travel an average of about 50 miles per day. Nonresidents travel about 76 miles per day on average.

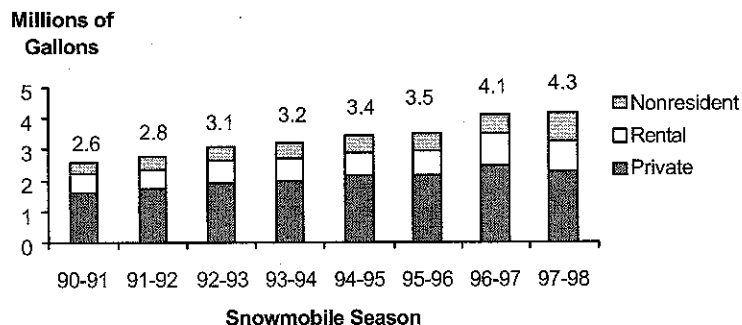
Figure 5: Number of Miles Traveled Per Day

We used several additional items on the questionnaire to estimate and verify gas usage. Specifically, we asked three questions about each **working** snowmobile a household owned. Table 2 shows the questions and the results compiled from respondents' answers.

Table 2: Snowmobile Characteristics

Question	Answer
How many days is that snowmobile used per year?	A median of 15 days per year.
How many miles per gallon does the machine achieve?	An average of 8.63 miles /gallon.
How many gallons of gas are used by the snowmobile each day?	An average of 6.0 gallons per day.

These results were then used to calculate the average amount of gasoline used by a Montana snowmobile in a year and this average amount multiplied by the number of privately owned snowmobiles. Rental machine usage was derived in a similar fashion. Nonresident usage was calculated from a per day basis. Figure 6 summarizes these calculations.

Figure 6: Gasoline Used by Snowmobiles, Montana, 1990-1998

Snowmobilers in Montana used about 4.3 million gallons of gas during the 1997-1998 season. Privately operated snowmobiles accounted for about two-thirds of this usage or 2.3 million gallons, rental machines about 956,000 gallons, and nonresidents about 970,000 gallons. The increase in gas usage may be attributable to the increased popularity of Montana snowmobiling areas in western Montana by Idaho and Washington residents.

Montana snowmobilers do not use exotic fuels. Almost all owners (97 percent) use unleaded gasoline. Other types of fuel are used only in specialized snowmobiles, such as racing machines. Primarily this 'other fuel' is aviation gas.

Of the few nonresidents (12 percent) who brought gas to Montana, most brought only what was in their snowmobiles. Extra tanks were an anomaly.

A Growing Sport?

We wanted some estimate of the change, if any, in snowmobiling's popularity and impact over the past several years. We reanalyzed data from previous surveys.

Table 5 shows the change. Nonresident snowmobile activity increased by 20 percent over the period, from about 185,000 nonresident activity days in 1993-94 to over 222,000 in 1997-1998.

Given the rise in activity days, it's somewhat surprising that nonresident spending did not grow substantially. One reason for this low growth is the rise in day snowmobilers on the Montana-Idaho border. These visitors have characteristics similar to Montana residents.

Table 6: Comparison of 1988, 1994 and 1998 Studies

	<u>1987-88</u>	<u>1993-94</u>	<u>1997-98</u>
Nonresident comparisons			
Total number of visits to destination	1	2	3
Number of days at destination	4	5	4
Number of days snowmobiling	3	4	4
Number of nonresident activity days	108,000	185,000	222,000
Average daily expenditure per person (1998 dollars)	\$178	\$151	\$198
Median daily expenditure per person (1998 dollars)	\$125	\$134	\$117
Total expenditures (1998 dollars)	\$25,998,000	\$43,667,000	\$44,131,000

Wish List

Residents and nonresidents also differed when asked to rate the importance of various snowmobile facilities, enhancements, and regulatory controls of the sport in Montana. As Table 9 shows, nonresidents were far more interested than residents in additional snowmobile-related signage, including roadside directions to sites, trail markers, and nature interpretations. Most

nonresidents also wished for heated shelters and outhouses. Residents, on the whole, placed much less emphasis on such facilities and enhancements.

The two groups differed markedly in the importance each placed on regulatory and safety factors. A much greater share of nonresidents than residents wanted emergency help available at snowmobile sites, law enforcement, user fees, and limited entry.

In short, nonresidents seem more worried about safety and overcrowding, and are much more likely to accept certain controls on the sport. Residents, on the other hand, seem to want unregulated access, and are more willing to accept undeveloped sites.

Table 9: Factors and facilities desirable to snowmobilers

Facilities	1994		1998	
	Resident	Nonresident	Resident	Nonresident
Plowed parking areas	47.5	50.7	66.5	76.2
Road sign directions to snowmobile trails	50.0	83.1	57.5	75.4
Snowmobile loading ramps	17.3	19.7	17.4	31.7
Heated shelters at the parking areas	8.4	25.4	15.8	30.0
Groomed trails	53.7	85.3	56.5	71.9
Nature interpretation along the trails	12.1	45.4	21.7	50.0
Trail markers and signs	68.7	87.3	61.6	83.3
Trail maps	71.3	94.4	66.6	87.5
Long trails	69.0	78.6	58.3	81.5
Loop trails	63.2	82.1	57.6	77.8
Shelters along trails	26.1	55.6	31.6	54.4
Outhouses along trails and parking areas	27.5	63.6	35.7	50.8
Regulation				
Rider certification	19.3	32.6	38.0	40.8
Emergency help	29.5	48.9	45.2	62.7
Law enforcement on trails	7.5	33.8	17.9	44.8
Limits on number of people	5.4	28.6	7.4	21.2
Entry permits to use an area	2.0	23.9	4.4	30.0
Volunteer assistants	24.0	38.7	46.6	57.4
Discourage large groups	8.4	28.4	8.2	26.8
User fees for groomed trails	10.0	30.5	18.8	41.4

Key Issues

Our survey also offered an opportunity for respondents to comment on what they thought was the most important issue facing snowmobilers. Access to snowmobiling areas was the most frequently cited issue by both residents and nonresidents. About half of the 16 percent of nonresidents mentioned access to Yellowstone. About a quarter of nonresidents cited safety factors. Nearly half of residents mentioned access issues and about 20 percent mentioned safety particularly personal responsibility.

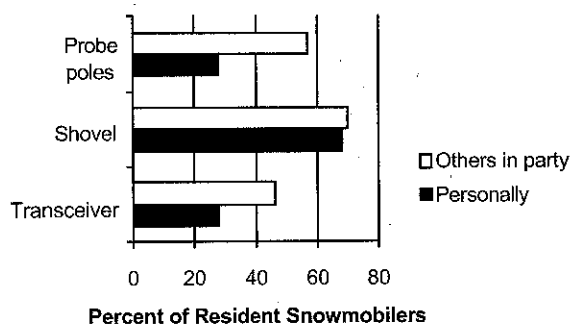
Overall, differences in resident and nonresident responses to this open-ended question seem to echo other findings in the survey. That is, nonresident snowmobilers as a group seem more like Montanans in their snowmobiling attitudes.

Table 10: The most important issue facing snowmobiling?

	<u>Residents</u>	<u>Nonresidents</u>	<u>Residents</u>	<u>Nonresidents</u>
Access to snowmobiling areas	43.2	11.2	46.5	34.3
Access to Yellowstone Park	na	na	5.1	16.4
General access			41.4	17.9
Impact on the environment	4.7	15.7	9.5	13.4
Noise, smoke	2.8	3.9	4.9	3.0
Number of people	1.9	11.8	4.6	10.4
Safety	17.6	32.2	19.5	25.4
Personal responsibility	5.2	5.9	10.0	4.5
Machine power and speed	2.4	7.2	3.2	3.0
Safety	10.0	19.1	6.3	17.9
Facilities and fees	7.1	8.6	4.4	4.5
Other	8.0	8.6	14.9	16.4
Environmentalists	2.4	3.3	7.8	11.9
Regulations	3.3	3.3	5.4	1.5
Other	2.3	2.0	1.7	3.0
No response	19.4	23.7	5.2	6.0

Avalanche Preparedness

Because of the recent snowmobiler deaths and accidents caused by avalanche, we asked about avalanche preparedness. Survey results suggest about 28 percent of snowmobilers wear avalanche transceivers and carry probe poles for avalanche rescue. About twice as many companions wear transceivers and carry probe poles. Nearly three-quarters of all snowmobilers carry shovels which have other snowmobiling uses. In many cases respondents claimed they did not need to be prepared, as they did not snowmobile in avalanche areas.

Figure 6: Avalanche equipment

About one third of respondents said they had attended an avalanche workshop. Of this third, about half had attended one in the last year. Seminars were conducted by government experts followed by snowmobile clubs and search and rescue groups.

Summary

In summary snowmobiling is a significant sport in the state, with significant economic impacts.

According to our data, it exceeds downhill skiing in terms of activity days per season -- if not necessarily in total economic impact, given the different spending patterns for each sport.

We estimate that nonresident snowmobilers spent over \$44 million in Montana during the 1997-98 winter season. In addition, residents spent about \$86 million during the same period.

We estimate that snowmobilers (resident and nonresident alike) paid over \$1 million directly into the highway trust fund during the 1997-98 season via gasoline taxes. It's worth remembering, as policy makers and others eye this revenue stream, that residents and nonresident snowmobilers differ markedly in some ways -- income profile, spending patterns, concerns, and desires. Development of facilities and regulation of the sport could satisfy one group at the expense of the other.



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Information

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The first attempts at building a vehicle that would move over snow on runners happened over 70 years ago. Many dreamed of building a power-driven sled, especially where heavy snowfalls often meant the difference between life and death when attempting to transport an ill person to emergency care.

In 1935, a snowmobile was built with skis in front and a sprocket wheel and tracked system in back. It carried 12 people, and family doctors, veterinarians, ambulance and taxi drivers were first in line to purchase one. A modified version found a market in the logging industry.

It was the late 1950s, with the development of smaller gasoline engines, before the one- or two-passenger lightweight chassis snowmobile was marketed - and with it, a new recreational activity was born.

Ten years later, there were dozens of manufacturers producing snowmobiles that sold for a few hundred dollars a piece.

Today, with more than 4 million riders, snowmobiling is a major winter recreational activity and a significant factor in increased winter tourism in much of Canada and the snowbelt of the United States.

The history of the "snow machine" is yet to be completed. Today's snowmobile bears little resemblance to earlier models. By today's standards, many of the machines of the 60's and 70's are considered antiques.

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News & Info

Upcoming Snowmobiling Events



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[Download Safety Week manual](#)




February 9-18, 2013

Take a Friend Snowmobiling campaign

February 9-18, 2013

[2013 Campaign Manual and Forms](#)

Snowmobiling News

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Farmers Almanac: Will Winter Return With a Vengeance?

After a year of unprecedented warmth — both during the winter and summer months — the great debate over whether or not Old Man Winter will return with a vengeance is on.

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SAE Snowmobile Challenge 2012 - A Great Success!

Clarkson University of Potsdam, NY, captured first place in the 2012 SAE Clean Snowmobile Challenge, which drew to a close March 10 at Michigan Technological University.

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Snowmobile Safety: Ride Safe so you can Ride Tomorrow

Snowmobiling is in full stride around the world and now is the time for snowmobilers to keep snowmobile safety a top-of-mind awareness issue. Snowmobile safety is nothing new to organized snowmobiling. Snowmobile Administrators, the Manufacturers, snowmobile associations and clubs joined together years ago in developing the **Safe Riders! You make snowmobiling safe™** safety campaign which brought safe snowmobiling practices, training and enforcement to a new level.

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Snowmobiling Websites and Facebook Expand

As we look at the last 20 years of communication transformation, most are amazed. Communication amongst

snowmobilers has changed forever and it appears the evolution will continue.

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